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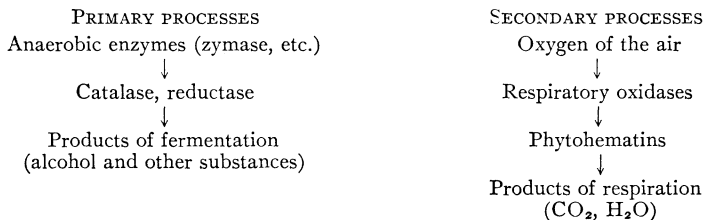
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To unify the respiration of animals and plants still further, it will be necessary to show that the oxygen from the air is not combined directly with the hemo-chromogen, but by the aid of oxidases; and this the recent discovery of these enzymes in the blood renders probable. The behavior of the colorless blood of the lower animals and the sap of plants is quite similar, according to this view.

It is not to be supposed, however, that oxygen does not have other relations than to the chromogens; but these are neglected in the above scheme, which may be taken as only a partial representation of respiratory processes. In fact the more the matter is studied, the more complex and diversified appear the chemical changes subsumed by the word respiration.—C. R. B.

Fungi and hemicelluloses.—In the hope of obtaining some insight into the action of fungi on their hosts, SCHELLENBERG⁵ has investigated the behavior of a number of species, which can be cultivated on media of known composition, in respect to their decomposition of hemicelluloses. Those used were several, the products of whose hydrolysis was known. *Molinia coerulea* among the grasses, *Lupinus hirsutus* among the Leguminosae, *Phoenix dactylifera* among palms, *Impatiens Balsamina* and *Cyclamen europaeum* with an amyloid reserve, and *Ruscus aculeatus* among the lilies furnished the hemicelluloses. On hydrolysis they yield respectively dextrose and xylose, galactose and arabinose, galactose and mannose, galactose and xylose, mannose and a little arabinose. A large number of fungi were tested. To explain their action, which he finds strictly specialized and very different from that on true celluloses, SCHELLENBERG has to assume the existence of at least four different enzymes, which he calls the *Molinia*, the *Lupinus*, the *date*, and the *amyloid* enzymes. Study of their behavior on dead and living plant parts permits similar conclusions. Thus fungi may be used to eliminate hemicelluloses from celluloses in unignified tissues. The effect of fungi in the destruction of the plant constituents in the soil is probably much more important than has been believed hitherto.—C. R. B.

Jurassic plants.—SEWARD⁶ has published the results of his study of collections of Jurassic plants from Caucasia and Turkestan, sent by the Comité Géologique de Russie. The Caucasian collection contains representatives of the

⁵ SCHELLENBERG, H. C., Untersuchungen über das Verhalten einiger Pilze gegen Hemizellulosen. *Flora* 98:257-308. 1908.

⁶ SEWARD, A. C., Jurassic plants from Caucasia and Turkestan. *Mém. Comité Géol. Russie N. S.* 38:1-48. *pls.* 1-8. 1907.